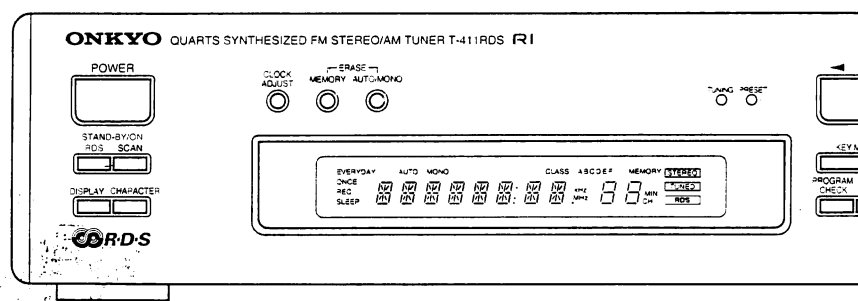


T-411RDS/T-409

Quartz Synthesized FM Stereo/AM Tuner

Instruction Manual



CONTENTS

Features	2	Receiving stations	8
Important safeguards	3	Using preset stations	9
Precautions	3	Entering characters	11
Control positions and names	4	Receiving RDS	12
Setting the voltage selector and Tuning step frequency (Worldwide models only) ..	5	Connecting Onkyo liverpool separate collection series	14
Making system connections	5	Using the timer	15
Making antenna connections	6	Trouble shooting guide	16
Connecting the power	7	Specifications	16
Setting the clock	8		

Thank you for your purchase of the Onkyo T-411 RDS/T-409 Tuner.

Please read this manual thoroughly before making connections and turning power on.

Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new T-411 RDS/T-409.

Please retain this manual for future reference.

Features

■ RDS (Radio Data System – T-411RDS only)

RDS gives you station and programming data for expanded tuner functionality. Your T-411RDS includes PS (Programme Service), PTY (Programme Type), AF (Alternative Frequencies), TP (Traffic Programme), and RT (Radio Text).

■ 30-Station FM/AM Random Preset Tuning

Assign a number in any order from 1 to 30 to each of your favorite FM or AM stations, and you can access it simply with the touch of a button.

■ 2-Mode Play Timer

When you connect your T-411RDS or T-409 to a Liverpool Separate Collection amplifier that has a timer function, you can set the timer to play the radio either one time, or once every day. There is also a sleep timer and recording timer.

■ Smart Auto Tuning

Your T-411RDS and T-409 can automatically select and memorize the twenty strongest stations in your area, making preset tuning a breeze.

■ Automatic Scan Tuning

■ Clock

■ Fluorescent Display

■ RI Remote Control Compatible

Memory Preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in order to charge the back-up system. The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged. This period is shorter when the unit is exposed to a highly humid climate.

FOR EUROPEAN MODEL

- This apparatus complies with requirements of EC directive 87/308/EEC.

FOR CANADIAN MODEL: (POUR LE MODELE CANADIEN)

- For models having a power cord with a polarized plug.
CAUTION: TO PREVENT ELECTRIC SHOCK. MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

- Sur les modèles dont la fiche est polarisée.

ATTENTION: POUR ÉVITER LES CHOCS ÉLECTRIQUES. INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

ATTENTION FOR BRITISH MODEL

- Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel.
- **IMPORTANT:** The wires in the mains lead are coloured in accordance with the following code:

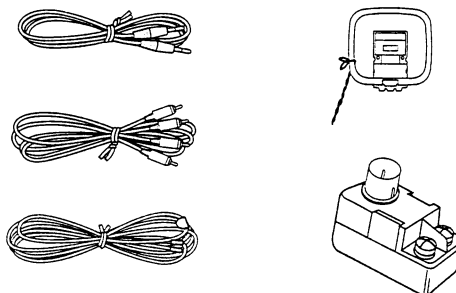
Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.



Supplied accessories

- | | |
|--------------------------|--|
| 1 Remote control cable | 1 AM loop antenna |
| 1 Audio connection cable | 1 75/300 ohm antenna adaptor (worldwide models only) |
| 1 T-shaped FM antenna | |

“WARNING”

“TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.”

CAUTION:

“TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.”



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



- The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
- The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important safeguards

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

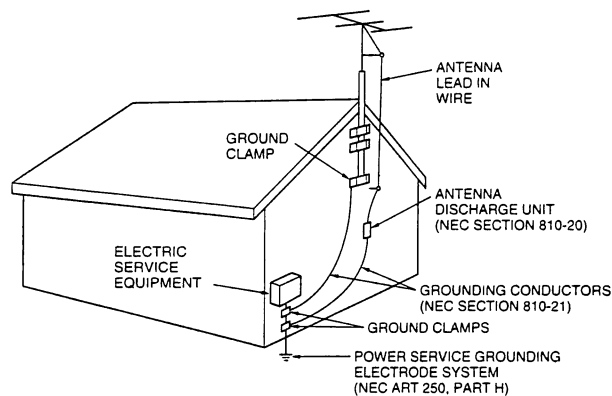
PORTABLE CART WARNING



7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Polarization** – If the appliance is provided with a polarized plug having one blade wider than the other, please read the following information: The polarization of the plug is a safety feature. The polarized plug will only fit the outlet one way. If the plug does not fit fully into the outlet, try reversing it. If there is still trouble inserting it, the user should seek the services of a qualified electrician. Under no circumstances should the user attempt to defeat the polarization of the plug.
12. **Power-Cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, especially near plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** – An outdoor antenna should be located away from power lines.
15. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
18. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

19. **Outdoor Antenna Grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of the antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 73.1.

FIGURE 73.1:
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



NEC – NATIONAL ELECTRICAL CODE

S2898A

Precautions

1. Warranty Card

The serial number is written on the rear panel of this unit. Copy the serial number and model number onto your warranty card and keep it in a safe place.

2. Care

From time to time you should wipe the front and rear panels and the cabinet with a soft cloth. For heavier dirt, dampen a soft cloth in a weak solution of mild detergent and water, wring it out dry, and wipe off the dirt. Following this, dry immediately with a clean cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since these could damage the finish or remove the panel lettering.

3. Power

WARNING

BEFORE PLUGGING IN THE UNIT FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

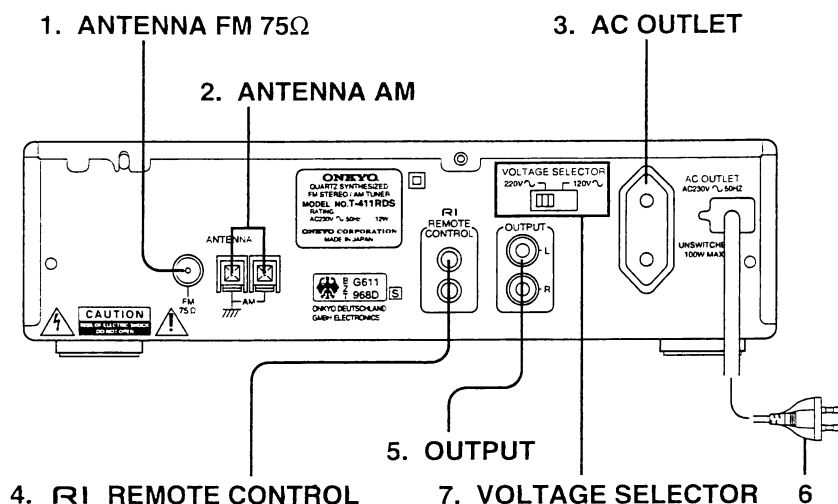
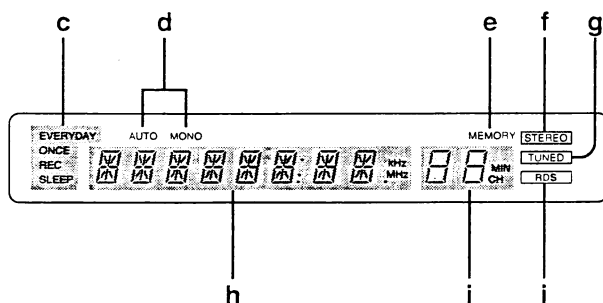
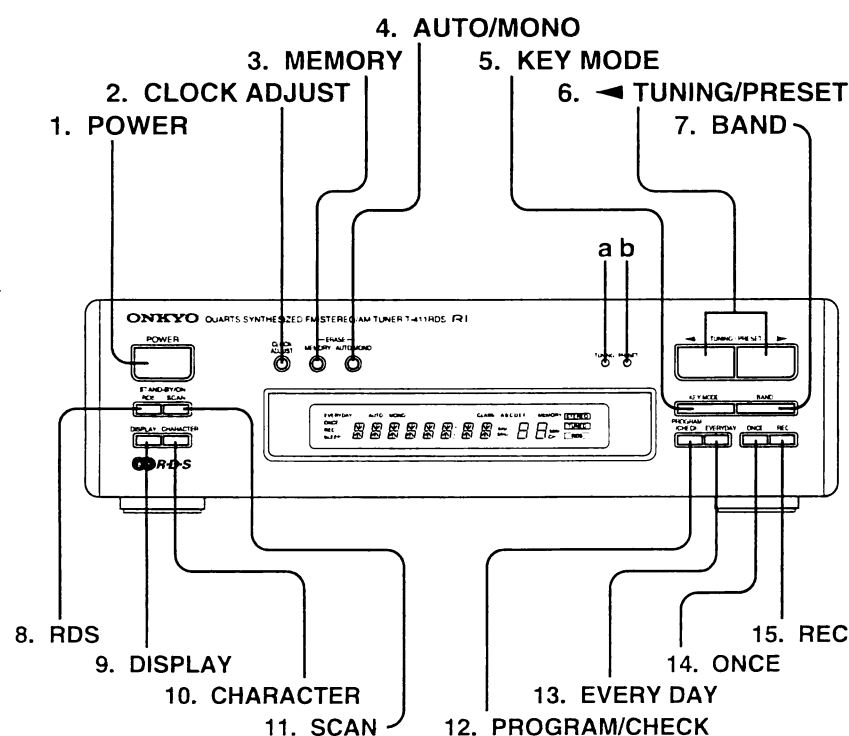
- Some models are designed for use only with the power supply voltage of the region where they are sold.

European model (except U.K.):	AC 230V, 50Hz
U.K. and Australian models:	AC 240V, 50Hz
U.S.A. and Canadian models:	AC 120V, 60Hz
Worldwide model:	AC 120V/220V switchable, 50/60Hz

- **Voltage Selector (Rear Panel)**

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power button on. (See "Setting the voltage selector and Tuning step frequency (Worldwide models only)", P. 5.) Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.

Control positions and names



NOTE:

If there is a protective film on the surface of the display, which is making it difficult to read the display, remove it.

For more information about buttons, turn to the page number in the [].

Front panel

1. Power Button [7]
2. Clock Adjust Button [8]
3. Memory Button [8, 9, 10]
4. Stereo Auto/Mono Button [9, 10]
5. Key Mode Button [8, 9, 10]
6. Tuning/Preset Buttons [8, 9, 10, 11, 13, 15]
7. Band Selector Button [8, 9]
8. RDS Button [12, 13]
(T-411 RDS only)
9. Display Button [13]
10. Character Button [11]
11. Scan Button [13]
(T-411 RDS only)
12. Program/Check Button [15]
13. Timer Everyday Button [15]
14. Timer Once Button [15]
15. Recording Button [15]

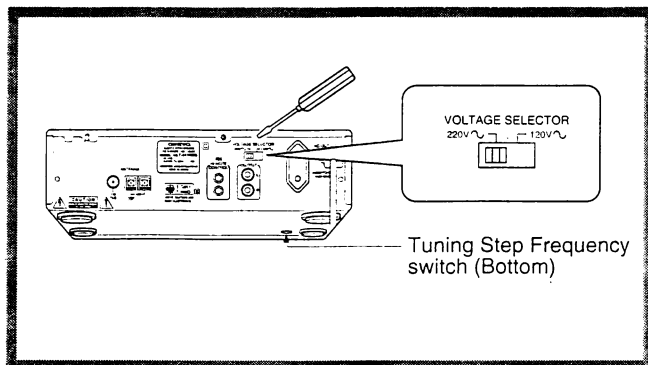
The Display

- a. Tuning Indicator
- b. Preset Station Indicator
- c. Timer Setting Indicator
- d. Stereo Auto/Mono Indicator
- e. Memory Indicator
- f. Stereo Indicator
- g. Tuned Indicator
- h. Multi Display
- i. Memory Channel / Sleep Time Display
- j. RDS Station Received Indicator
(T-411 RDS only)

Rear panel

1. FM Antenna Terminal [6]
2. AM Antenna Terminal [6]
3. AC Outlet [5]
4. RI Remote Control Jack [5]
5. Output Jack [5]
6. Power Supply Cord [7]
7. Voltage Selector [5]
(Worldwide models only)

Setting the voltage selector and Tuning step frequency (Worldwide models only)



Voltage selector

1. Determine the proper voltage for your area: 220V or 120V.
2. If the preset voltage is not correct for your area, insert a screwdriver into the groove in the switch. Slide the switch all the way to the right (120V) or to the left (220V), whichever is appropriate.

Tuning step frequency

Worldwide models are equipped with a switch that controls the AM (9kHz/10kHz) and FM (50kHz/200kHz) bands tuning steps.

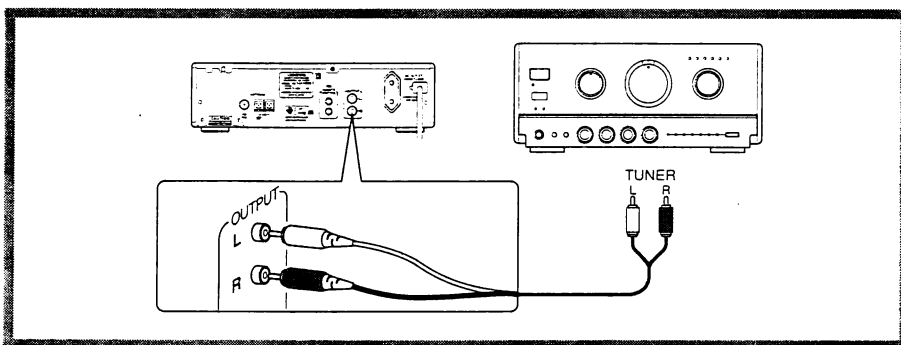
Please set this switch to match the tuning step frequency in your area.

U.S.A. : AM 10kHz, FM 200kHz

Other areas : AM 9kHz, FM 50kHz

Making system connections

- Do not plug in the power cord until all connections have been made.
- On each pair of input or output jacks, the lower jack (marked R) corresponds to the right channel, and the upper jack (marked L) to the left channel.

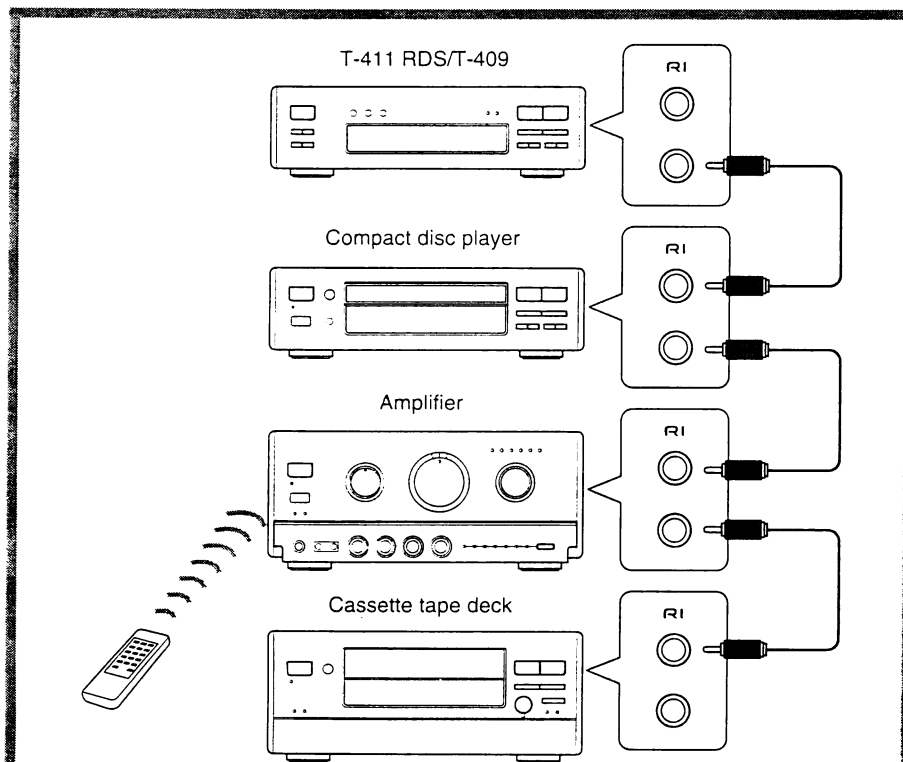


Connecting the amplifier

Connect the tuner's OUTPUT jacks and the amplifier's INPUT jacks using the audio connection cable. Refer to the amplifier's instruction manual for connections.

AC outlet (unswitched)

This AC outlet (unswitched) allows you to plug in another appliance such as an electric lamp etc. Maximum is 100W.



You can use the following buttons to control the T-411 RDS/T-409 using the supplied remote control of your Onkyo amplifier or receiver.

FM : FM band selection button

AM : AM band selection button

◀ PRESET ▶ : Preset station UP/DOWN button

Connecting Onkyo components for RI operation

When the T-411 RDS/T-409 is connected to an amplifier with the Onkyo **RI** mark, you are able to operate it by pressing the TUNER buttons on the amplifier's supplied remote control.

When connecting Onkyo products, it is necessary to attach the **RI** cable to be able to use the remote control of the amplifier to control the entire system.

1. To use this tuner with an amplifier, cassette tape deck and compact disc player with the **RI** mark, insert the remote control cable plugs into the REMOTE CONTROL jacks as shown.
2. As the exact connection sequence of the **RI** cable is unimportant, you can connect from the amplifier to either the tuner, the cassette tape deck or to the compact disc player.
3. To operate correctly, the remote control must face towards the remote control sensor of the amplifier.

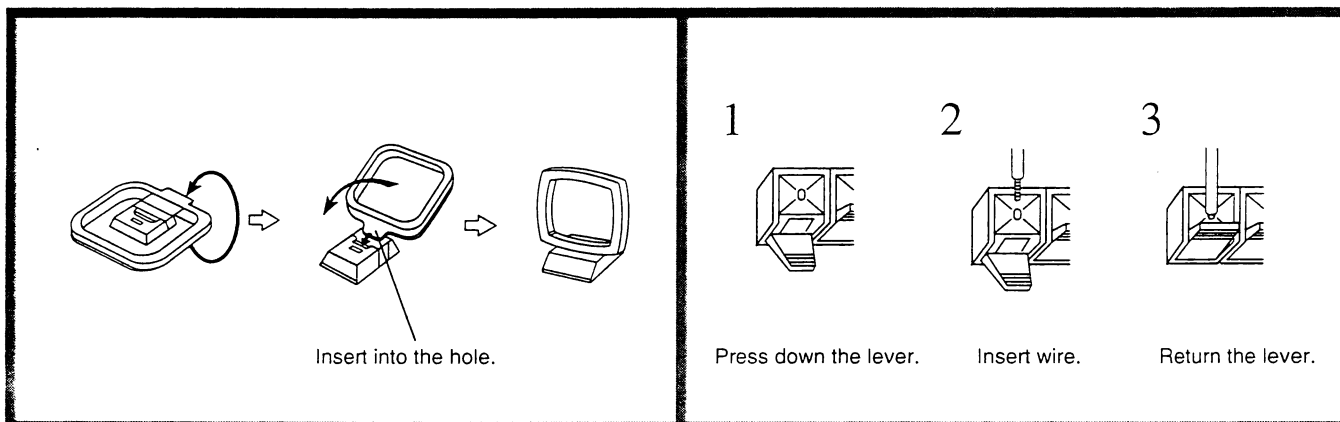
NOTE:

- The upper and lower **RI** remote control jacks have the same function.
- Remote control operation is not possible when only the remote control cable is connected — the audio connection cables must also be connected.
- An **RI** remote control cable equipped with a 1/8" (3.5mm) diameter miniature two-conductor phone plug is included with the T-411 RDS/T-409 and with every compact disc player and tuner with the **RI** mark.

Making antenna connections

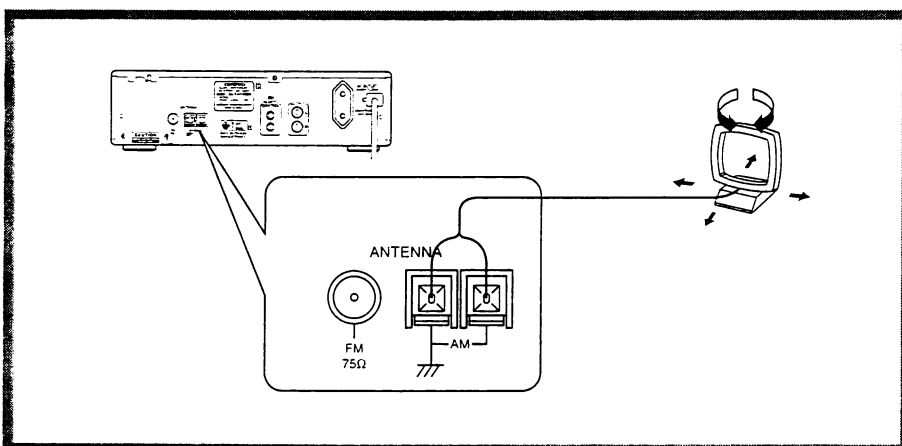
Assembling the AM loop antenna

Assemble the loop antenna as shown in the illustration.



Connecting the AM loop antenna

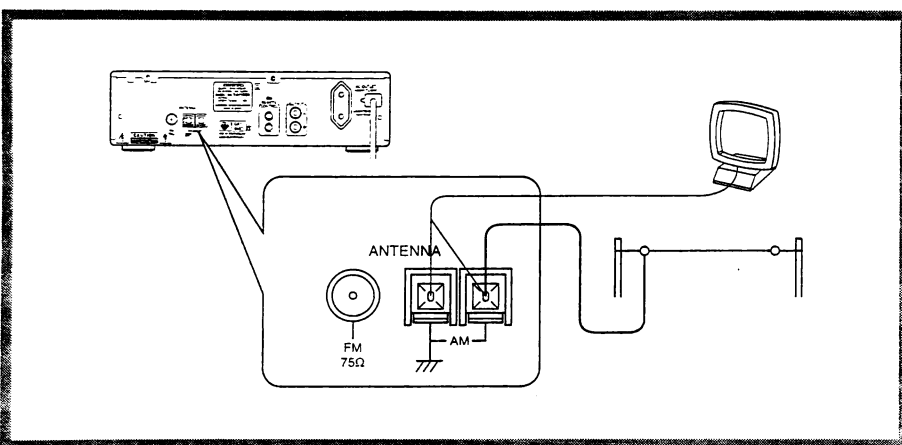
The AM loop antenna is for indoor use only. Set it to the direction where you can receive the clearest sound. Put it as far as possible away from the main unit, TV set, speaker cords and power cord.



Connecting the AM outdoor antenna

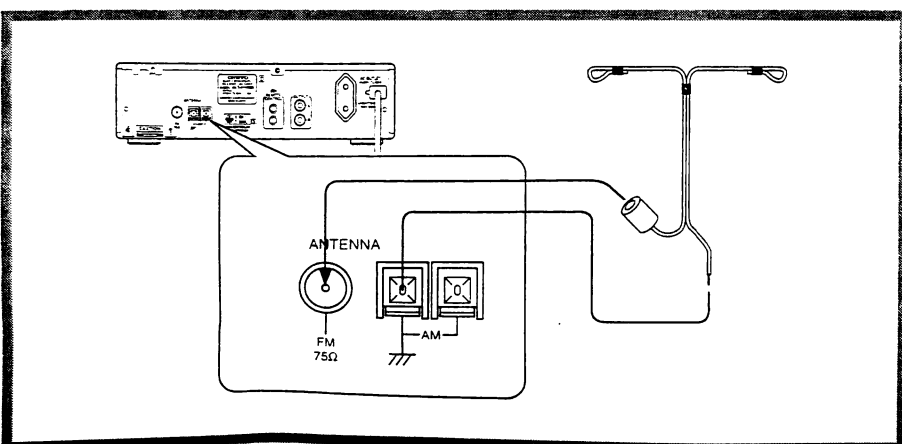
When reception is not satisfactory by the use of the attached AM loop antenna alone, connection of the external antenna is recommended.

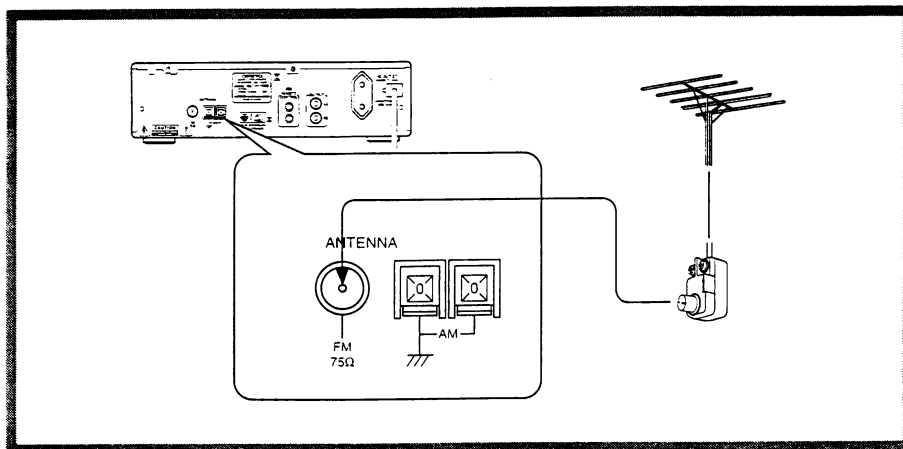
(Do not remove the AM loop antenna)
The external antenna will be more effective if you stretch it horizontally in a high place above a window or outside.



Making FM antenna connections

Connecting the T-shaped FM antenna
The T-shaped FM antenna is for indoor use only. Move the antenna in various directions until the clearest signal is received. Fix it with push pins in the position giving the least amount of distortion.



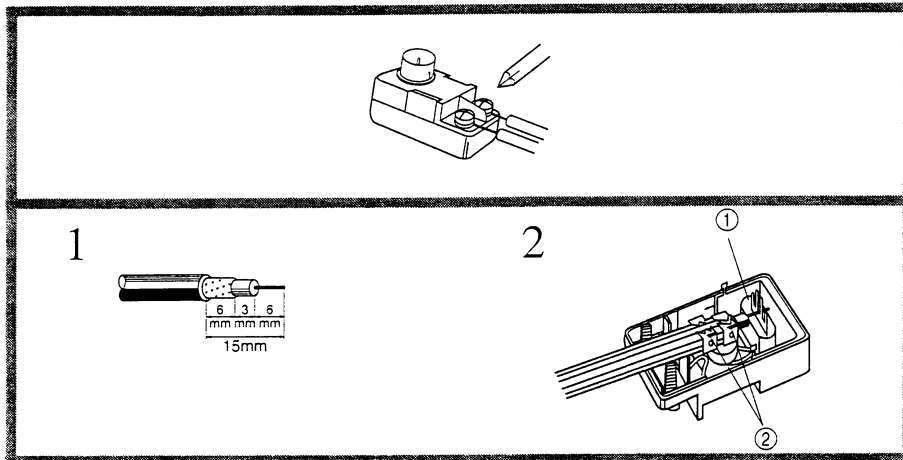


Connecting an FM outdoor antenna

If the reception is not very clear with the attached T-shaped FM antenna, the use of an external antenna is recommended. Please make sure that you comply with the following considerations regarding the location.

Keep the antenna away from noise sources (neon signs, busy roads etc.)

It is dangerous to put it close to power lines, so keep it well away.



Connecting a 75/300 ohm antenna adaptor

Please refer to the following procedure when connecting a 75/300 ohm antenna adaptor. (This adaptor is included if your T-411 RDS/T-409 is a worldwide model.)

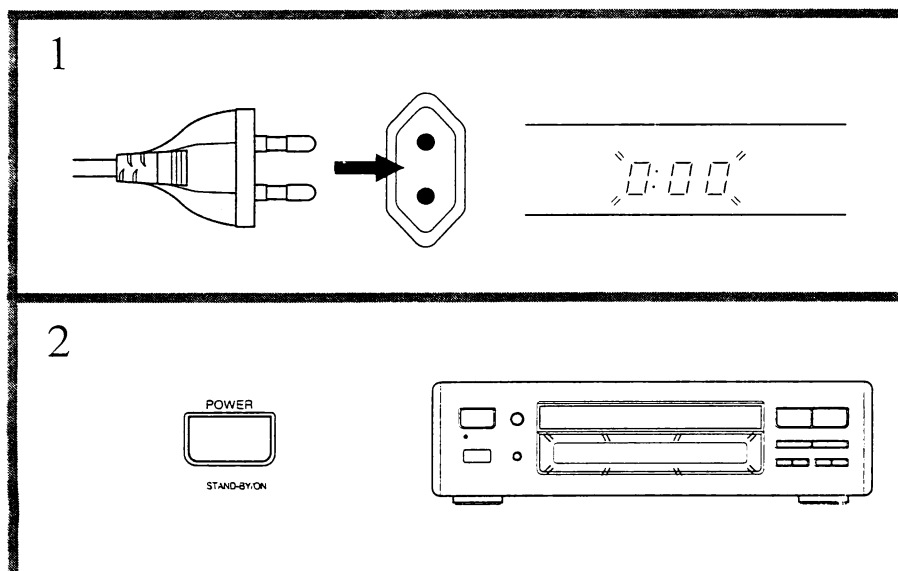
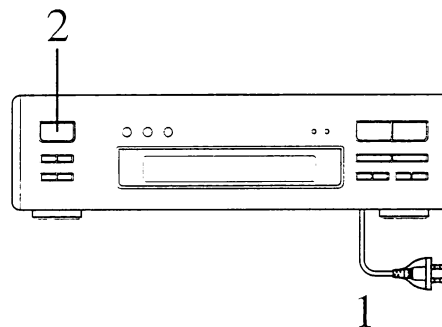
Connecting the coaxial cable

1. Prepare the coaxial cable as shown.
2. Using your fingernail or a small screwdriver, remove the cover. Connect the 75/300 ohm antenna adaptor to the coaxial cable and replace the cover.

① Insert the end of the cable.

② Clamp in place with pliers.

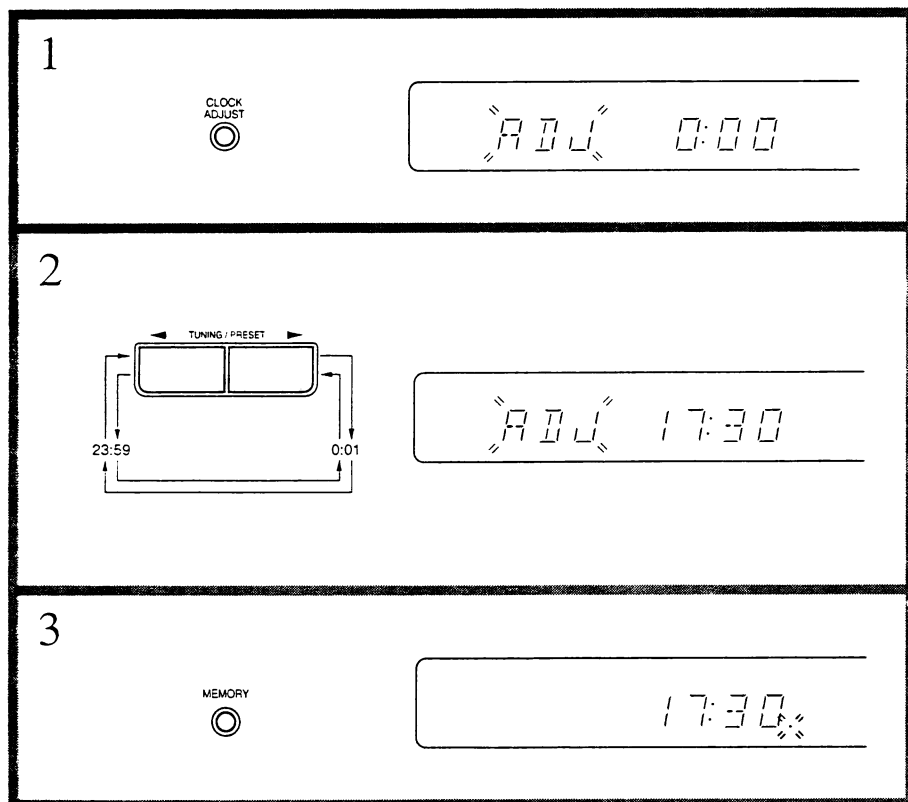
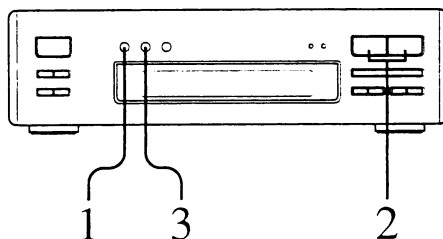
Connecting the power



Connecting the power

1. When you connect the power cord to the wall outlet, "0:00" will light up on the display.
2. Press the POWER button. The display will light up.

Setting the clock



Setting the clock

1. Press the **CLOCK ADJUST** button twice quickly within a half of second.
2. Use the **◀ TUNING/PRESET ▶** buttons to adjust the time.

Adjust the time by pressing these buttons. If you hold one of them down longer than 0.5 seconds, the display changes quickly. Press the button once again to stop the display changing.

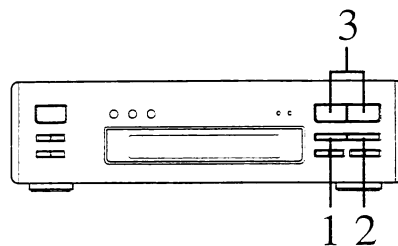
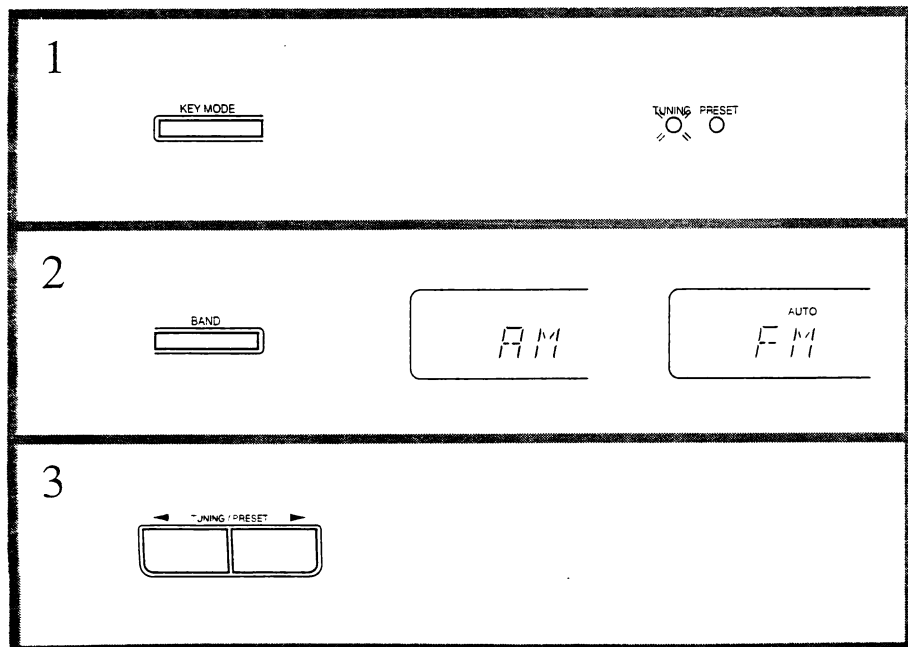
3. Press the **MEMORY** button to set the new time.

The clock starts to work.

You can set the time accurately from the TV or radio news.

To find out the time while a unit of equipment is playing, press the **CLOCK ADJUST** button. Press the button once again to return to the original display.

Receiving stations



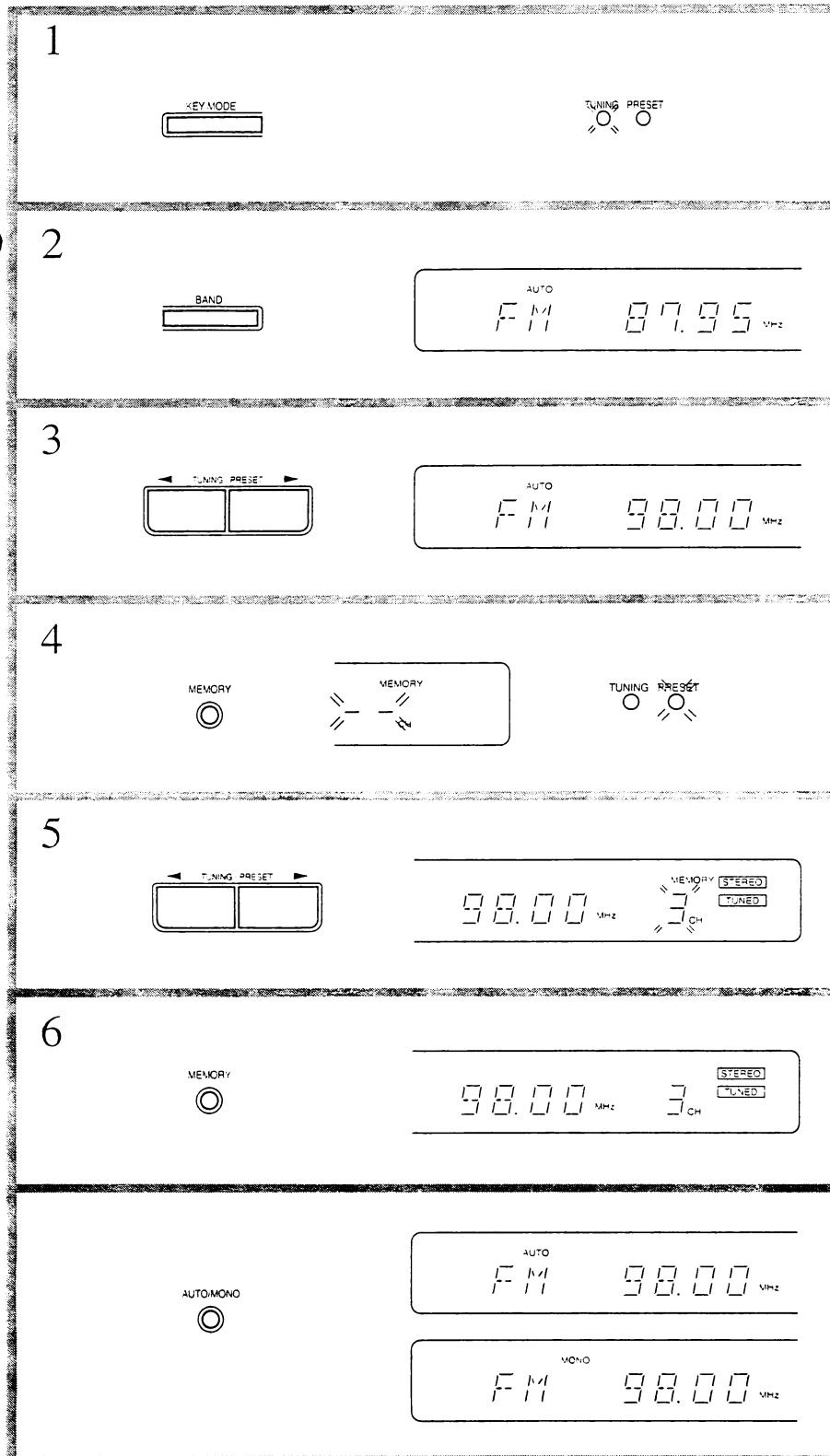
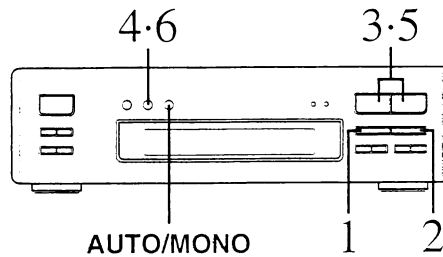
Tuning the radio

Make sure that the input selector on the amplifier has been set to **TUNER**.

1. Press the **KEY MODE** button to enter **TUNING** mode.
2. Press the **BAND** button to select either **FM** or **AM**.
3. Use the **◀ TUNING / PRESET ▶** buttons to change the frequency.

Place the AM loop antenna or T-shaped FM antenna on a wall or other surface in the position which gives the best reception.

Using preset stations



Programming radio stations

For example, to enter a station at 98.00 MHz (FM) into number 3 in the Preset Memory:

1. Use the **KEY MODE** button to enter **TUNING** mode.
2. Use the **BAND** button to select **FM**.
3. Use the **◀ TUNING/PRESET ▶** buttons to select the frequency (98.00 MHz).
If the **◀ TUNING/PRESET ▶** buttons are held down for more than 0.5 seconds, when they are released scanning will continue automatically. Scanning will stop when a station is tuned into.
4. Press the **MEMORY** button.
The memory indicator and the **PRESET** indicator will light up.
5. Use the **◀ TUNING/PRESET ▶** buttons to select the preset number to store into (3).
6. Press the **MEMORY** button to store the frequency into the selected preset.

Notes:

- AM stations can be stored in the memory using the same procedure.
- Up to 30 FM and AM stations can be stored in the preset memory in total.
- If the FM station received is an RDS station with a PS (Program Service Name), the frequency display will change to the PS display.
If there is no PS, the frequency display will not change. (Refer to page 12 for the RDS function.)

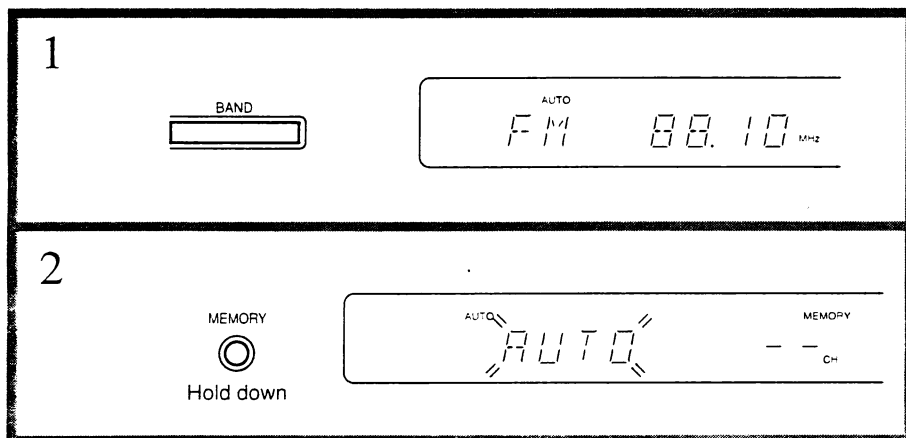
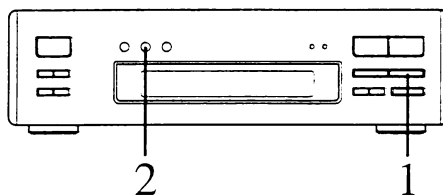
Listening to a stereo radio station

If you tune in a stereo FM station, the **STEREO** display will be illuminated if the signal is sufficiently strong.

If the signal is weak, it may be impossible to tune into your desired station. In this case, tune in as follows.

1. Press the **AUTO/MONO** button and the **MONO** display lights.
2. Select the station you would like to listen to using the **◀ TUNING/PRESET ▶** buttons.

Using preset stations



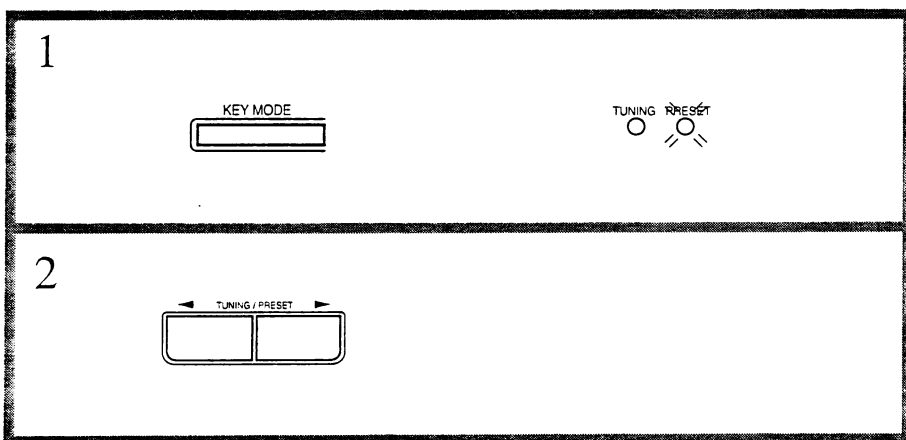
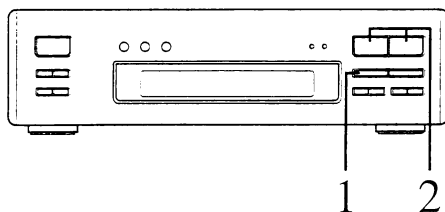
Using Auto Memory (FM mode only)

This function allows you to store the frequencies into memory automatically, without having to go through and store each frequency manually. If the Auto Memory is used, all FM stations previously stored in memory will be replaced.

1. Use the **BAND** button to select FM.
2. Hold down the memory button for a few seconds. "AUTO" will start flashing on the display. Keep holding down the button for a few more seconds to start the Auto Memory function.

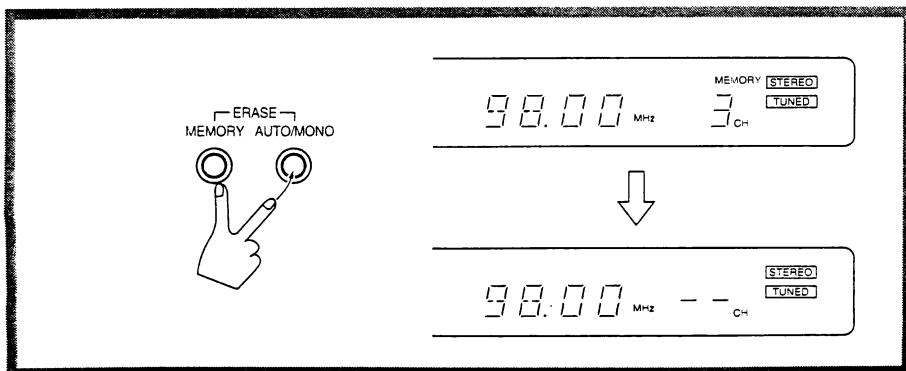
The frequencies are scanned from low frequencies to high frequencies, and the broadcast signals with the best signal quality are selected, and stored into memory. The stations will be stored from the lowest to the highest frequency.

Up to 20 stations can be stored in total.



Selecting preset stations

1. Use the **KEY MODE** button to enter PRESET mode. The PRESET indicator will light up.
2. Use the **TUNING / PRESET** buttons to select the desired preset. The Tuner will automatically switch to AM or FM according to the station selected.

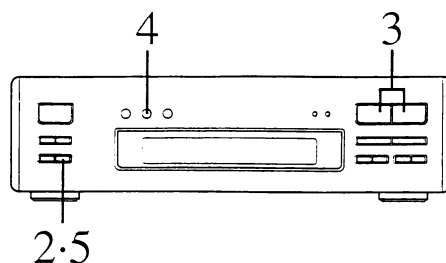


Cancelling preset stations

1. Select the preset station as explained in the previous section.
2. Press and hold the **MEMORY** button and within a second of doing this, press the **AUTO/MONO** button. "--" will be shown on the MEMORY channel display.

Note that if you fail to press the AUTO/MONO button while holding down the MEMORY button, the AUTO MEMORY will start.

Entering characters



The following 54 characters can be used.

	A	B	C	D	E	F
G	H	I	J	K	L	M
N	O	P	Q	R	S	T
U	V	W	X	Y	Z	"
,	.	!	@	#	\$	%
&	'	()	*	+	=
-	_	~	^	~	~	~
0	1	2	3	4	5	6
7	8	9				

Entering new characters

If the station you are currently listening to on the T-411 RDS is an RDS station, the program service name has priority over other information. Therefore you will not be able to enter characters for the station name.

1. Select the station you wish to name (see previous sections).
2. Press the CHARACTER button to enter character input mode.
3. Use the ◀ TUNING / PRESET ▶ buttons to select a character.
4. Press the MEMORY button to store the character.

Repeat the procedures 3 and 4 to store more characters. You can store up to 8 characters in all.

When you want to leave a space between characters, press the memory button. The bar moves on to the next position.

5. Press the CHARACTER button once again to complete the operation.

NOTE:

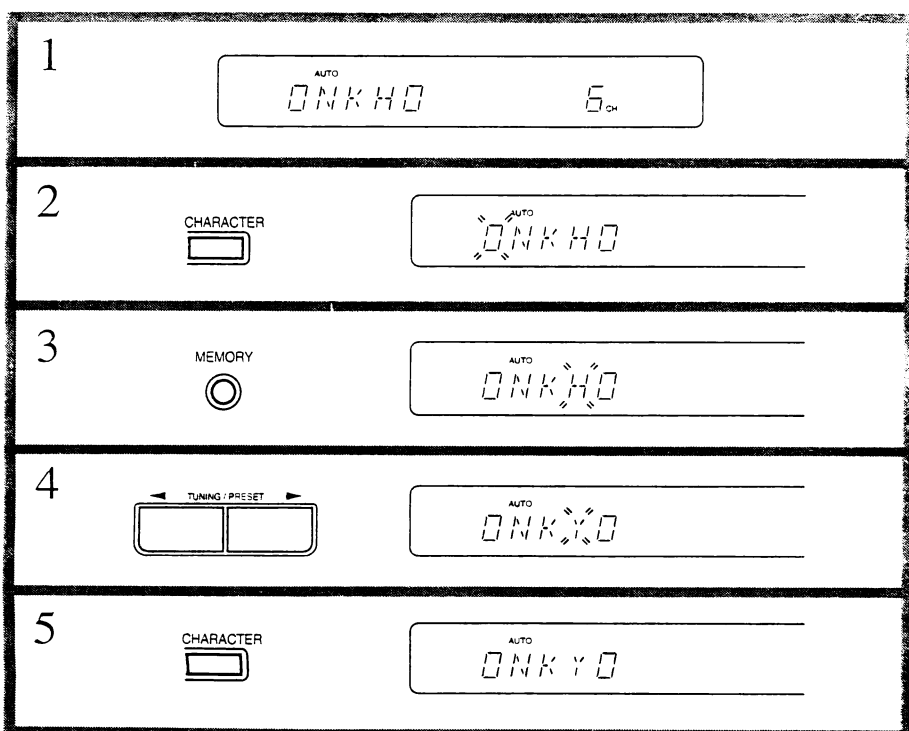
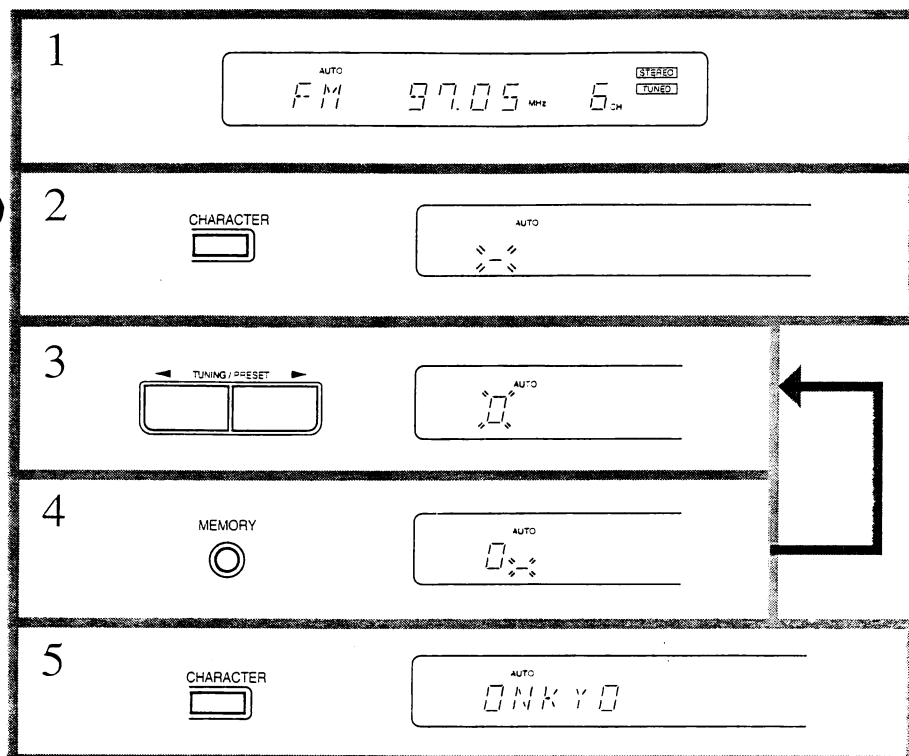
If you have not pressed a button for 16 seconds, the operation will complete automatically.

Changing existing characters

1. Select the station you wish to make changes to (see previous sections).
2. Press the CHARACTER button to enter character input mode.
3. Press the MEMORY button until the character which you want to change is selected.
4. Use the ◀ TUNING / PRESET ▶ buttons to change the character.
5. Press the MEMORY button to store the character.

Clearing all of the characters stored in memory

1. Press the CHARACTER button.
2. Hold down the MEMORY button then press the AUTO/MONO button.

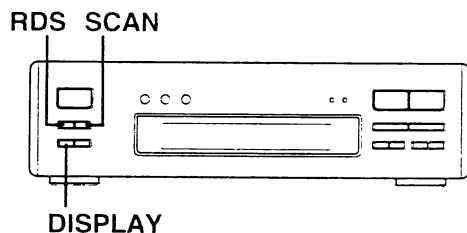


Receiving RDS

RDS reception is only available on the T-411 RDS model, and only in areas where RDS broadcasts are available.

What is RDS?

Many FM stations now transmit RDS signals which give additional information. RDS provides you with various services so that (for example) you can choose a station broadcasting your favorite categories of music, or other information. The information on the right side is available on this unit.



PS: Programme Service Name

When an RDS station broadcasting PS information is received, the name of the station will be displayed instead of the frequency.

PTY: Programme Type

When an RDS station broadcasting PTY information is received, the type (category) of the broadcast will be displayed.

TP: Traffic Programme

When an RDS station broadcasting TP information is received, the traffic information will be displayed.

AF: Alternative Frequency list

When a station broadcasting AF information is received, a frequency list of the stations servicing the same programme in the surrounding is provided. From this list, the tuner can automatically search for the strongest frequency for a given station.

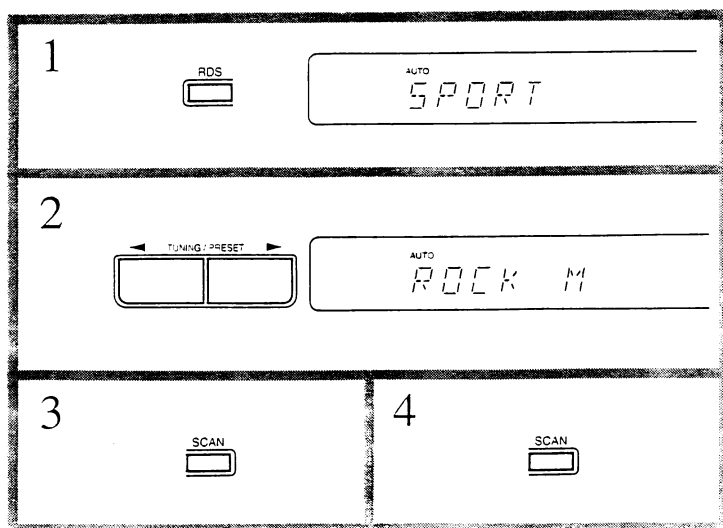
RT: Radio Text

When an RDS station broadcasting RT information is received, the information received from the station will be shown on the tuner's display.

PTY Classifications

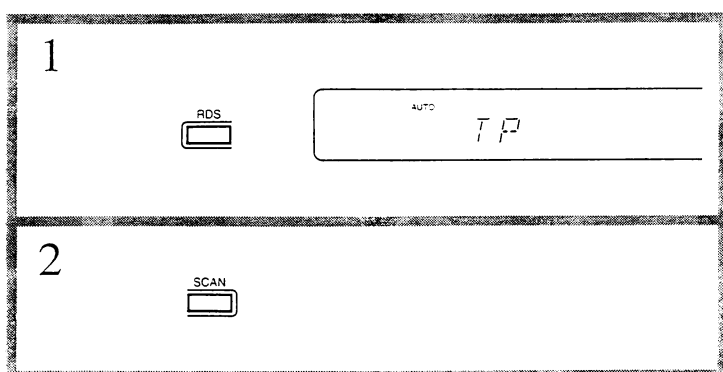
1	NEWS	News reports	Short accounts of facts, events and publicly expressed views, reportage and actuality.
2	AFFAIRS	Current affairs	Topical reporting of current events and affairs.
3	INFO	Information	General information such as weather forecasts, consumer affairs, medical help etc.
4	SPORT	Sport	Programmes concerned with any aspect of sport.
5	EDUCATE	Education	Formal educational programmes.
6	DRAMA	Drama	Radio plays and serials
7	CULTURE	Culture	Cultural programmes (including religious affairs)
8	SCIENCE	Science and technology	Programmes about the natural sciences and technology.
9	VARIED	Varied	Speech based programmes not covered by the above categories eg. quizzes, panel games, comedy, etc.
10	POP M	Pop music	Commercial music, which would generally be considered to be of current popular appeal, often featuring in current or recent record sales charts.
11	ROCK M	Rock music	Contemporary modern music, usually written and performed by young musicians.
12	M.O.R M	Middle of the road music	Easy listening music as opposed to Pop, Rock or Classical.
13	LIGHT M	Light classics	Classical music for general rather than specialist appreciation.
14	CLASSICS	Serious classics	Performances of major orchestral works, symphonies, chamber music etc. and including Grand Opera.
15	OTHER M	Other music	Music styles not covered by the above categories, eg. Jazz, Rhythm & Blues, Folk, Country, Reggae.

RDS reception is only available on the T-411RDS model.



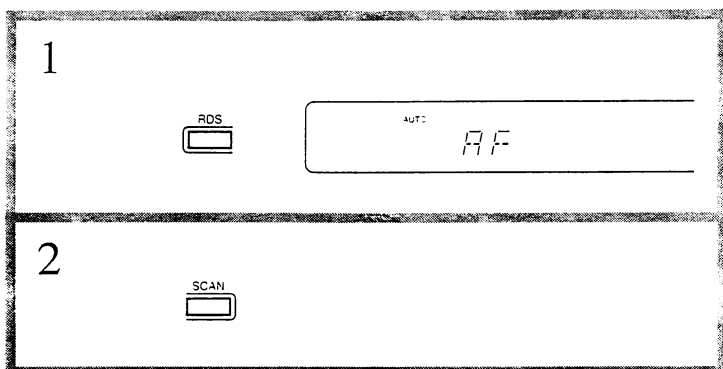
How to search for a station which broadcasts your favorite category (PTY scan)

1. Press the RDS button, and the programme type of the currently selected station will be shown on the display (for example, "SPORT").
If the station you are receiving is not broadcasting RDS, "NOT RDS" (this is not an RDS station) will be shown on the display.
2. Use the ◀ TUNING/PRESET ▶ buttons to select another programme type (PTY) (for example, "ROCK M"). See the PTY description below.
3. Press the SCAN button to start searching for the chosen PTY. When a station is received with the desired PTY, the scanning stops for approximately 5 seconds, before the unit starts scanning again.
4. When the desired station is reached, press SCAN again to stop scanning.



Receiving RDS traffic information

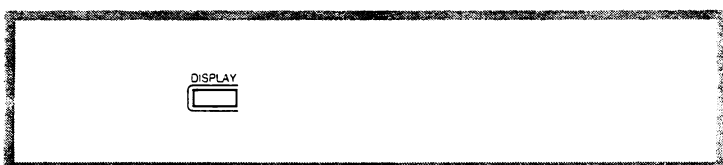
1. Press the RDS button until TP appears on the display.
If TP is shown on the display, it indicates that the current station is broadcasting traffic information.
2. Press the SCAN button to start searching for a TP station.
When the unit receives a TP station, it stops scanning. If the unit cannot receive any signal, "NOT FIND" (cannot find the station) is shown on the display.



Searching for the station which sends the clearest and strongest signal. (AF search)

If the station you are listening to is not an RDS station, this search function cannot be used.

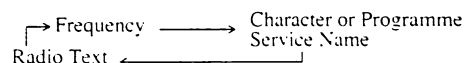
1. Press the RDS button until AF appears on the display.
If the station you are receiving is not broadcasting RDS, "NOT RDS" (this is not an RDS station) will be shown on the display.
2. Press the SCAN button to start searching for the strongest signal that this station can be received on.



Displaying Radio Text (RT)

If the station you are listening to is not an RDS station, this function cannot be used.

1. Each time you press the DISPLAY button, the display changes as follows.



If the current station you are listening to is not an RDS station, only the frequency of the station and the characters (see pages 11) appears. (If there have been no characters entered, only the frequency is shown.)

When RT is received, it can sometimes take between a few seconds and 15 seconds (more or less) to show RT on the display. Sometimes the following messages will be shown on the display. **WAIT:** indicates that it requires more time to receive the RT information. When the information is received, the characters will scroll across the display.

NO TEXT: this appears for 3 seconds and indicates that even though an RDS station is being received, there is no RT information included.

Connecting Onkyo Liverpool Separate Collection Series

If this unit, a compact disc player or an auto-reverse cassette deck from the Onkyo Liverpool Separate Collection series is connected to an amplifier from the same series, the following functions are possible.

One-Touch Recording from a CD player to an auto-reverse cassette deck (eg. from C-711 to K-R609)

Using One-Touch Recording to record from CD to cassette, the following operations will be performed with the pressing of just one button:

- The level will be adjusted
- The cassette will be rewound to the beginning
- The CD will start to play, and the cassette will start to record.

Additionally, the following three modes are provided:

Fadeout Dubbing: When recording from CD to tape, the last song that can be recorded on side A of the tape will fadeout at the end of the tape, and that song will be recorded again from the beginning on side B.

Album dubbing: When recording from CD to tape, as the end of the side of the tape approaches, the CD player calculates how many songs will fit on the side of the tape. The songs not fitted on will be recorded on the other side. When calculating, if the current song does not fit on the side of the tape, the recording continues to the end of the side and the tape will reverse. The remainder of the songs will be recorded on the second side.

Time Edit: While recording from CD to tape, if the current song will not fit on side A, from the remainder of the songs on the CD the song with the best time that will fit is chosen and recorded. On side B, the song that could not be recorded at the end of side A will be recorded first, followed by the remainder of the songs, but missing out the one that was recorded on side A.

If at the end of side B the current song will not fit, the song with the best time that will fit from the remaining songs is recorded. When all the songs have been recorded, the remainder of the tape will be recorded over blank.

* Please see the instruction manual of the cassette tape deck (such as the K-R609) for detailed operating instructions.

Timer function

Timer Play (once): You are able to play from your selected component (CD, tape, tuner) at the designated time.

Timer Play (every day): You are able to play from your selected component (CD, tape, tuner) at the designated time every day.

Timer Record: You are able to record your favorite programs from the tuner, starting at the designated time.

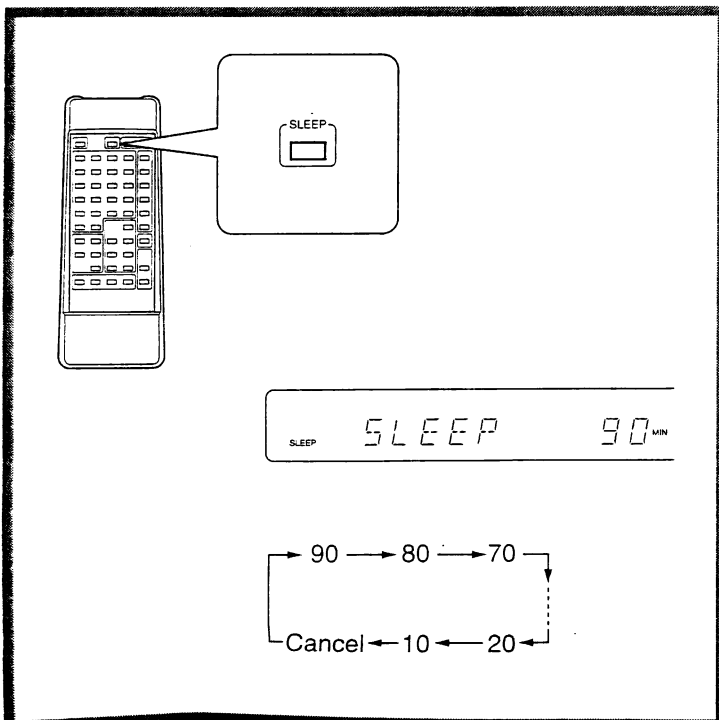
Sleep Timer: You are able to set the system to automatically turn off after a certain time, up to a maximum of 90 minutes.

* Please see the "Using the timer" on this page and next page.

Using the timer (Use of the Onkyo Liverpool Separate Collection)

Make sure that the clock has been set correctly before setting the timer. (See page 8)

Make sure that the source component is connected to an amplifier with a timer function, and that the CD or cassette tape has been inserted into the appropriate component.



Sleep facility

The sleep timer can power off the system after a specified time period.

To operate this function, use the remote control supplied with your amplifier.

1. Start the source playing that you would like to listen to. (CD, Tape or radio broadcast)
2. Set the amount of time after which you want the system to turn off.

The sleep timer works for up to 90 minutes.

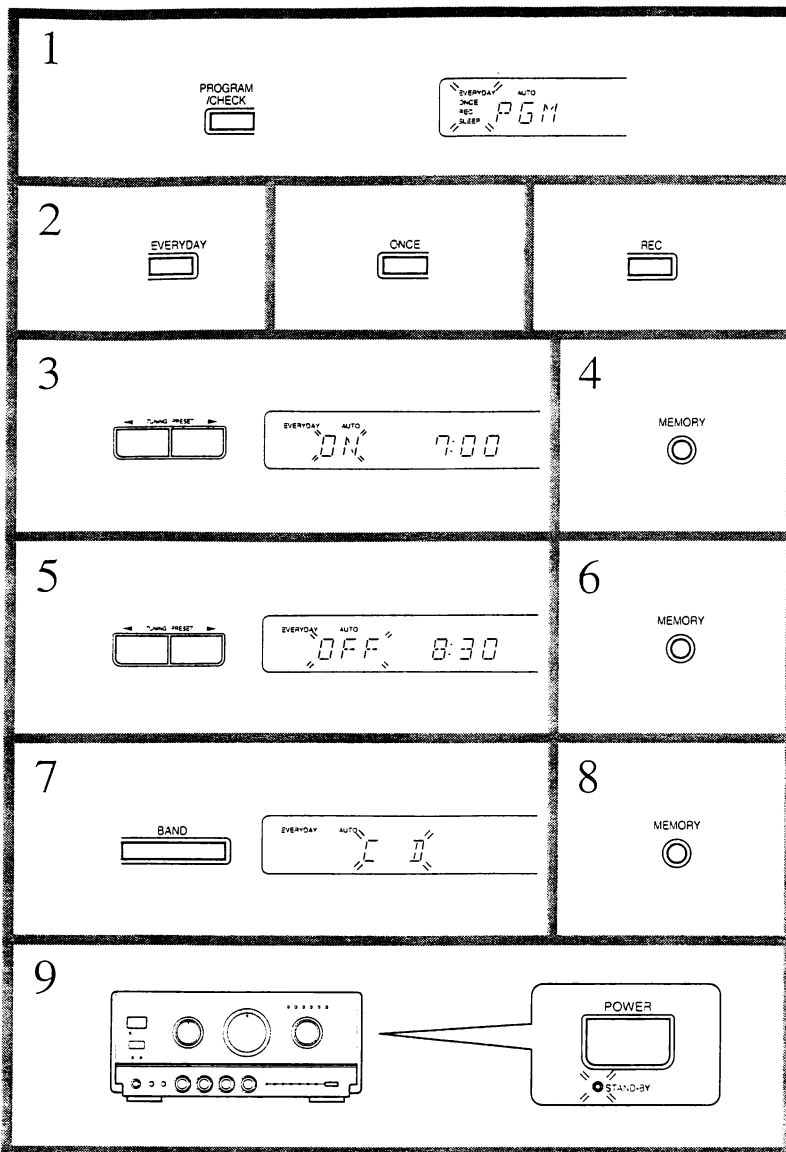
You can shorten the timer by 10 minute increments by pressing the SLEEP button until the desired time has been reached. When the set time comes, the power will be switched off automatically.

Canceling the SLEEP setting

Press the SLEEP button until it changes to the source display you are listening to.

or

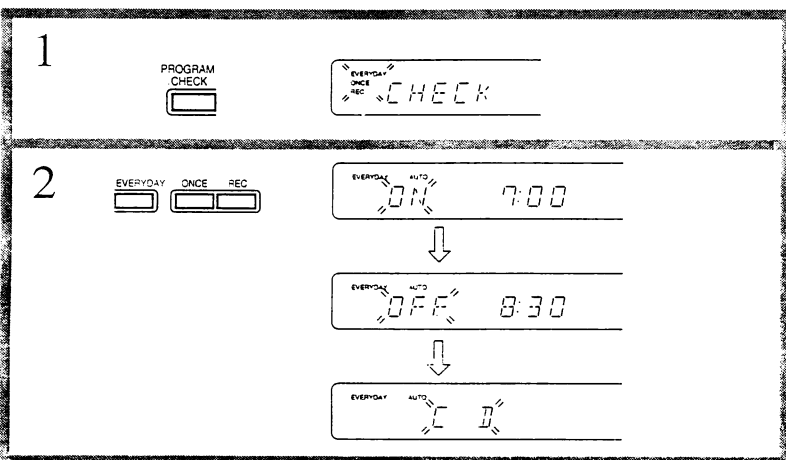
The timer can also be cancelled while it is in operation, by turning off the power.



Starting playing (or recording) at a selected time

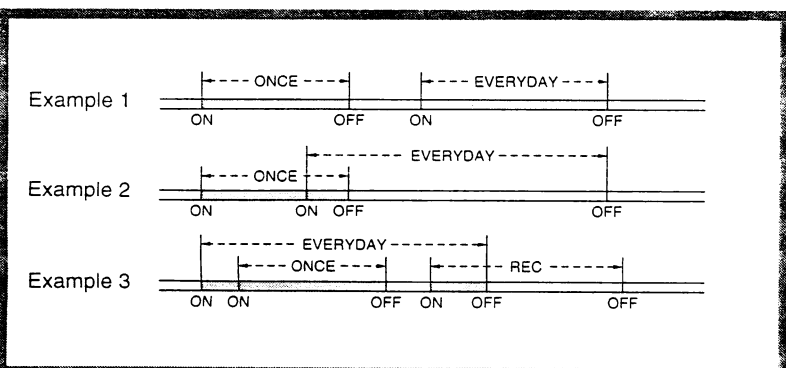
The illustration on the left is an example of setting the timer to start playing the CD at 7:00 AM and to stop playing at 8:30 AM every day.

1. Press the **PROGRAM/CHECK** button to enter the timer program mode. "PGM" is shown on the display.
2. Select your desired mode pressing any of the following buttons.
EVERYDAY: When you want to start playing (or recording) at certain time every day.
ONCE: When you want to start and stop playback only once.
REC: When you want to start and stop recording only once.
 "ON" will be shown on the display.
3. Set the starting time using the **◀ TUNING/PRE-SET ▶** buttons.
4. Press the **MEMORY** button to store the "ON" time into memory.
 After storing the "ON" time, the T-411 RDS/T-409 will suggest an "OFF" time of one hour after the "ON" time you specified. This can be changed to the time you desire.
5. Set the stopping time using the **◀ TUNING/PRE-SET ▶** buttons.
6. Press the **MEMORY** button to store the "OFF" time into memory.
7. Use the **BAND** button to select the source.
 Select the component or mode you wish to turn on at the specified time, from CD, TAPE, FM or AM. If you have selected REC in procedure 2, this will select the recording source, either FM or AM.
8. Press the **MEMORY** button to complete the operation.
9. Turn the amplifier's power off.
 All the components connected to the amplifier will enter stand-by mode.



Checking the timer settings

1. Press the **PROGRAM/CHECK** button twice to enter program check mode.
2. Press the button corresponding to the timer you wish to check. (EVERYDAY, ONCE or REC)
 The "ON" time is shown and flashes on the display. If you press the same button again, or leave it for 5 seconds, the "OFF" time then the source will be shown.



Note Setting the timer

You are able to make up to 3 timer settings — one for EVERYDAY, one for ONCE, and one for RECORD, provided the none of the settings overlap.
 Note in example 2 that the OFF time for ONCE turns off the unit in the middle of the EVERYDAY period, because they overlap.

Trouble shooting guide

- **No power.**
Cause: Power cord is disconnected.
Remedy: Connect power cord.
- **Buzzing noise on AM, usually conspicuous at night or with a weak station.**
Cause: Noise from electrical apparatus such as fluorescent lamps.
Remedy: Move set to different location.
Remedy: Change the position or direction of the loop antenna.
- **High pitch noise.**
Cause: Noise from TV.
Remedy: Keep unit away from TV set.
- **Crackling noise on AM and FM.**
Cause: Noise caused by turning a fluorescent lamp on and off.
Remedy: Move the antenna as far away as possible from the fluorescent lamp.
Cause: Noise from automobile ignition.
Remedy: Install an outdoor FM antenna as far away as possible from the road.
- **AM stations cannot be received.**
Cause: AM loop antenna is not attached.
Remedy: Connect the included AM loop antenna to the AM antenna terminals.
- **TUNED indicators and stereo indicator light but sound is distorted and separation is bad.**
Cause: Station is too strong.
Remedy: Change to T-shaped antenna.
Cause: Multiple reflection of the radio waves because of tall buildings or mountains.
Remedy: Use antenna which has better directivity and select a point with the least distortion.
- **TUNED indicators and stereo indicator flicker and hiss is heard on FM.**
Cause: Station is too weak.
Remedy: Install an outdoor FM antenna.
Remedy: Change the position or direction of the outdoor antenna.
Cause: Stereo FM broadcasts cover only about half the distance of an ordinary broadcast.
Remedy: Switch to mono reception. (Even stereo broadcasts will be heard in mono.)
- **No station or undesired station is recalled when a Preset button is pressed.**
Cause: The power cord has been unplugged for a long time.
Remedy: The memory contents are lost if the power is not turned on and off a few times each month. Store all stations in the memory again and remember to turn power on and off a few times each month.
- **The RDS function does not work.**
Cause: The station is not an RDS station.
Remedy: Receive an RDS station.
Cause: The reception station signal is too weak.
Remedy: Install an outdoor FM antenna.
Remedy: Change the position or direction of the outdoor antenna.
Cause: Too much interference.
Remedy: Move the antenna as far away as possible from fluorescent lamps.
Remedy: Install an outdoor FM antenna.
- **The tuning steps by which the tuned frequency increases/decreases have been set at the factory to the proper value for the area where each unit is to be sold. If you use the unit in a country where a different tuning step is required or if the broadcast frequencies in your country change so that you can not tune in radio stations precisely, contact your ONKYO authorized service center.**
- **Excessive electrical interference may temporarily render this system's sensitive microcomputer inoperable. If this happens, unplug the system for at least five seconds.**

Specifications

FM

Tuning Range:	87.50 – 108.00MHz (50kHz steps) 87.90 – 107.90MHz (200kHz steps)
Usable Sensitivity:	Mono: 11.2dBf, 1.0μV, 75 Ohms IHF 0.9μV 75 Ohms DIN Stereo: 17.2dBf 2.0μV, 75 Ohms IHF 20μV 75 Ohms DIN
50dB Quieting Sensitivity:	Mono: 16.1dBf 1.7μV 75 Ohms Stereo: 36.1dBf 17μV 75 Ohms
Capture Ratio:	1.5dB
Image Rejection Ratio:	80dB
IF Rejection Ratio:	90dB
Signal-to-Noise Ratio:	Mono: 73dB IHF Stereo: 66dB IHF
Selectivity:	55dB DIN (±300kHz, 40kHz dev.)
AM Suppression Ratio:	50dB
Total Harmonic Distortion:	Mono: 0.1% Stereo: 0.2%
Frequency Response:	30 – 15,000Hz (±1.5 dB)
Stereo Separation:	40dB at 1kHz 30dB at 70 – 10,000Hz
Output Voltage:	0.75V
Muting Level:	17.2 dBf 2.0 μV, 75 Ohms

AM

Tuning Range:	European models: 522 – 1611 kHz (9 kHz steps) Worldwide models: 531 – 1602 kHz (9 kHz steps) 530 – 1710 kHz (10 kHz steps)
Usable Sensitivity:	25μV
Image Rejection Ratio:	40dB
IF Rejection Ratio:	40dB
Signal-to-Noise Ratio:	40dB
Total Harmonic Distortion:	0.8%
Output Voltage:	150mV

General

Power Supply:	European models (except U.K.): AC 230V, 50Hz Canadian models: AC 120V, 60Hz U.K. & Australian models: AC 240V, 50Hz Worldwide models: AC 120V and 220V switchable, 50/60Hz
Dimensions (W × H × D):	275 × 79 × 308 mm 10-7/8" × 3-1/8" × 12-1/8"
Weight:	2.2 kg, 4.9 lbs.

Specifications and features are subject to change without notice.

ONKYO CORPORATION

Sales Planning & Promotion Dept.: 2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572, JAPAN
Tel: 0720-31-8133 Fax: 0720-34-1340

ONKYO U.S.A CORPORATION

200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
Tel: 201-825-7950 Fax: 201-825-8150

ONKYO DEUTSCHLAND GMBH ELECTRONICS

Industriestrasse 18-20, 8034 Germering, GERMANY
Tel: 089 84 93 20 Fax: 089 84 93 226 TLX: 05-21726 ONKY D

ONKYO FRANCE

Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue René Razel
91892 SACLAY, FRANCE Tel: (1) 69 33 14 00 Fax: (1) 69 41 35 84

